
Regular Articles

Suicide and Guilt as Manifestations of PTSD in Vietnam Combat Veterans

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Objective: Although studies have suggested a disproportionate rate of suicide among war veterans, particularly those with postservice psychiatric illness, there has been little systematic examination of the underlying reasons. This study aimed to identify factors predictive of suicide among Vietnam combat veterans with posttraumatic stress disorder (PTSD). **Method:** Of 187 veterans referred to the study through a Veterans Administration hospital, 100 were confirmed by means of a structured questionnaire and five clinical interviews as having had combat experience in Vietnam and as meeting the DSM-III criteria for PTSD. The analysis is based on these 100 cases. **Results:** Nineteen of the 100 veterans had made a postservice suicide attempt, and 15 more had been preoccupied with suicide since the war. Five factors were significantly related to suicide attempts: guilt about combat actions, survivor guilt, depression, anxiety, and severe PTSD. Logistic regression analysis showed that combat guilt was the most significant predictor of both suicide attempts and preoccupation with suicide. For a significant percentage of the suicidal veterans, such disturbing combat behavior as the killing of women and children took place while they were feeling emotionally out of control because of fear or rage. **Conclusions:** In this study, PTSD among Vietnam combat veterans emerged as a psychiatric disorder with considerable risk for suicide, and intensive combat-related guilt was found to be the most significant explanatory factor. These findings point to the need for greater clinical attention to the role of guilt in the evaluation and treatment of suicidal veterans with PTSD.

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Since the turn of the century, when Durkheim first reported suicide rates among European military men that were up to 10 times those among male civilians of comparable age (1), the link between military

service and suicide has been of clinical interest. However, it was not until after World War II that systematic analyses were undertaken which pointed to a higher rate of suicide among men who had served in the military than among other men of the same age (2-5). Suicidal behavior was observed to be particularly frequent among veterans with combat experience (4) and postmilitary psychiatric illness (2, 6).

Since the war in Vietnam, there have been numerous reports of a disproportionate rate of suicide among veterans of that war (7-14). Using a wide diversity of methods, measures, and sample selection criteria, these studies provided estimates of the rate of suicide among Vietnam veterans that ranged between 11% (12) and 65% (13) higher than the rate for nonveterans of the same age.

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Although a recent epidemiological analysis suggested that the total number of Vietnam veterans who have committed suicide has probably been overestimated (15), the accumulated evidence of the past two decades points to suicidal behavior among veterans as part of the complex legacy of the Vietnam experience. To date, however, there has been little systematic examination of the underlying reasons for this phenomenon.

In view of the findings of the World War II studies (2–6), we suspect that the suicide rate for Vietnam veterans would be much higher if the figures were restricted to combat veterans and that it would be higher still if they included only veterans with diagnoses of posttraumatic stress disorder (PTSD). Although national suicide statistics for these different groups of veterans do not exist, clinicians who have worked closely with men who saw considerable combat in Vietnam have noted that suicidal behavior is frequently a manifestation of PTSD (16–19).

This article aims to provide insight into some of the factors associated with suicide among Vietnam combat veterans with PTSD. It focuses in particular on lingering guilt related to wartime actions or events. It is based on data collected as part of a 5-year research and treatment project at a Veterans Administration (VA) hospital.

METHOD

Over the 5-year period, 187 male Vietnam veterans were referred to the project on the basis of two selection criteria: combat experience in Vietnam and suspected PTSD. The primary sources of referral were clinicians in the hospital's inpatient and outpatient units, staff at local Vietnam Veteran Outreach Centers, and individual veterans who were familiar with our work. All 187 men referred were initially included in the project, and 122 completed a comprehensive evaluation procedure, which we have described elsewhere in detail (20).

At the beginning of the procedure, each veteran completed a 46-page questionnaire that included (in addition to items dealing with his life before, during, and after his service in Vietnam) the Revised Combat Scale (21) and a checklist of PTSD symptoms based on the *DSM-III* diagnostic criteria for the disorder. He then participated in a series of five semistructured interviews that elaborated key wartime experiences and systematically reviewed all current and lifetime PTSD symptoms. Each symptom experienced by the veteran was explored for specific form and content, frequency and severity, and relation to actual wartime experiences.

Finally, the interviews elicited additional detailed information about the individual's life before and after his service in Vietnam. Of particular interest was the issue of suicidal behavior during these periods, includ-

ing both suicide attempts and suicidal preoccupation or ideation.

Of the 122 veterans who completed the evaluation procedure, exactly 100 were confirmed both as having had combat experience in Vietnam and as meeting the full *DSM-III* criteria for a current diagnosis of PTSD. All 100 veterans also met the *DSM-III-R* criteria for the disorder. The present analysis is based on these 100 cases. Sixty veterans were inpatients at a VA hospital at the time of their participation in the study and had been admitted for symptoms associated with PTSD, including drug or alcohol abuse. The remaining 40 veterans were treated on an outpatient basis.

These veterans were being treated an average of 15 years following their service in Vietnam. As in the general population of men who fought in Vietnam, their average age at the time of their war experience was just under 20 years. According to their scores on the Revised Combat Scale, these veterans had had considerably heavier combat exposure than the general population of those who served in Vietnam (21). Seventy percent of this group, compared to 27% of all Vietnam veterans, fell into the "heavy combat" classification, with scores of 10 or more on the 14-point scale. Only one of our veterans, compared to 35% of all Vietnam veterans, received a score of less than 4, the minimum for a designation of "moderate combat."

Following a procedure developed by us for the integration of structured and psychodynamic interview material (22, 23), the questionnaire and interview data obtained from the veterans were coded according to 118 preservice, service, and postservice variables. Using a closed-ended instrument, two members of the research team independently coded each case for all 118 variables. In each case one of the coders had first-hand knowledge of the veteran through having conducted the evaluation interviews and/or having treated him in follow-up psychotherapy. Interrater reliability on initial coding of the instrument was high, with a coefficient of reliability (24) of 0.88. All inconsistent ratings were reviewed by a third coder, and resolution was reached through discussion of the entire case, including review of the questionnaire and interview transcripts.

All variables included in the coding instrument were measured in categorical form, and most were dichotomized for the final analysis. Chi-square tests with Yates' correction were used to assess the significance of the relationships among these variables; suicide attempts and preoccupation with suicide were treated as the key dependent variables. Logistic regression analyses were performed to assess the relative contributions of the significant independent variables in predicting suicidal behavior among the veterans studied. All analyses were made with the SPSS statistical package (25). A *p* value of 0.05 or less was generally considered to indicate a significant difference. This was adjusted, however, by using the Bonferroni correction, when multiple tests were performed on the same set of data.

RESULTS

Nineteen of the 100 combat veterans given current diagnoses of PTSD had attempted suicide at least once since returning from Vietnam. Fifteen more had been preoccupied with suicide for a considerable part of their lives since they left the service. According to the commonly accepted clinical definition, this involved having "seriously thought about, planned or wished to commit suicide" (26). The seriousness of the suicidal intent among these veterans is suggested by the fact that during the course of study, three of the men who were diagnosed as suicidal actually did kill themselves.

The 66 veterans who had neither attempted nor been preoccupied with suicide were considered nonsuicidal. Comparisons between the suicidal and the nonsuicidal veterans showed similar frequency distributions of almost all PTSD symptoms. However, certain highly significant differences centering most strikingly on the issue of guilt were revealed.

Among all the variables examined, we found that the presence of persistent guilt related to wartime experiences provided the sharpest contrast between the suicide attempters and the nonsuicidal veterans. Two distinct kinds of guilt played a significant role in determining the vulnerability to suicide among these veterans with PTSD: guilt about combat actions and guilt about surviving when others had died. Although both combat guilt and survivor guilt were found among a high percentage of all the veterans with PTSD (63% and 46%, respectively), there were significant differences in the frequencies of these symptoms between the suicide attempters and the nonsuicidal veterans.

Guilt related to combat actions was marked in all 19 of the suicide attempters but in only 48.5% ($N=32$) of the 66 nonsuicidal veterans ($\chi^2=14.24$, $df=1$, $p<0.001$). Similarly, marked survivor guilt was present in a high proportion of the veterans who had attempted suicide (73.7%, $N=14$), compared to 36.4% ($N=24$) of those who were nonsuicidal ($\chi^2=6.87$, $df=1$, $p=0.009$).

The suicide attempters with PTSD could be distinguished from the nonsuicidal veterans with PTSD by a number of postservice symptoms besides guilt. All 19 veterans in the former group evidenced anxiety as an associated symptom of the disorder, in contrast to 66.7% ($N=44$) of the 66 nonsuicidal veterans ($\chi^2=6.90$, $df=1$, $p=0.009$). Almost as many of the suicide attempters (94.7%, $N=18$) showed marked depression as an associated symptom, compared to 56.1% ($N=37$) of the nonsuicidal group ($\chi^2=8.04$, $df=1$, $p=0.005$). A significantly larger proportion of the suicide attempters (89.5%, $N=17$) than of the nonsuicidal veterans (53.0%, $N=35$) also had severe cases of PTSD ($\chi^2=6.79$, $df=1$, $p=0.009$). Even when we used the Bonferroni correction to adjust the 0.05 level of significance to 0.01 ($0.05/5=0.01$) to account for the fact that the five separate chi-square tests were done on the same data, each of these findings remained statistically significant.

To assess the relative contributions of these variables in predicting suicide attempts, a forward stepwise logistic regression analysis was performed. Of the five independent variables included in the analysis (guilt about combat actions, survivor guilt, anxiety, depression, and severity of PTSD), only two added significantly to the predictive model. The first variable selected, guilt about combat behavior, yielded a model chi-square value of 22.98 ($df=1$, $p<0.001$), indicating that this variable made a highly significant improvement over the constant in predicting suicide attempts in this group of subjects. When we entered the second variable, depression, into the regression model, the model chi-square increased to 27.60 ($df=2$, $p<0.001$). The improvement chi-square value associated with depression was also significant ($\chi^2=4.62$, $df=1$, $p=0.03$).

In this final model, the goodness-of-fit chi-square value of 51.00 ($df=82$, $p=0.997$) had an exceptionally high probability of occurrence. Thus, a regression model that predicts suicide attempts among veterans with PTSD on the basis of combat guilt and depression very closely matches the "perfect" predictive model. The logistic regression coefficients (betas) for these two variables (9.16 and 1.95, respectively) indicate the relative contributions of each to the model and point in particular to the importance of combat guilt in predicting suicide attempts among the veterans studied.

The characteristics that distinguished the veterans who had made suicide attempts from the nonsuicidal group were found as well among a considerable, although not statistically significant, number of the 15 veterans who were preoccupied with suicidal thoughts. This was particularly true of guilt about combat actions, which we found among 80% ($N=12$) of those with suicidal ideation, and only 48.5% ($N=32$) of the nonsuicidal veterans ($\chi^2=3.71$, $df=1$, $p=0.05$).

When a logistic regression analysis was performed using the same set of five independent variables as were tested in relation to suicide attempts, guilt about combat emerged as a statistically significant predictor of preoccupation with suicide. With this one variable, which had a beta coefficient of 1.45, the regression model yielded a significant chi-square value of 5.24 ($df=1$, $p=0.02$). Further, the nonsignificant goodness-of-fit chi-square value ($\chi^2=81.00$, $df=1$, $p=0.42$) indicated that when only the variable of combat guilt is used, this predictive model for suicidal preoccupation does not significantly differ from the "perfect" model.

Since guilt about combat actions was so significant in predicting both suicide attempts and preoccupation with suicide, the combat experiences of the suicidal veterans were examined for possible determinants of their lingering guilt. We looked at specific combat actions that might be considered to have produced the guilt later experienced by the suicidal veterans, i.e., inadvertent or deliberate killing of civilians, mutilation or torture of the enemy, wounding or killing other Americans, rape, and passively witnessing nonmilitary actions by fellow soldiers. Somewhat unexpectedly,

such combat behavior was sufficiently frequent in the histories of the nonsuicidal as well as the suicidal veterans that it did not serve to distinguish the two groups. For example, the most frequent such action, the killing of civilians, which was found among 68.4% (N=13) of the 19 suicide attempters, was found among an only slightly smaller proportion of the 66 nonsuicidal veterans (57.6%, N=38). In the majority of cases in both groups, women and children were among those killed, which was particularly disturbing to the veterans.

Although the overt combat behavior of the suicidal and nonsuicidal veterans was quite similar, further analysis revealed significant differences between the two groups in the affective states under which the non-military killing of civilians occurred. Sixteen (84.2%) of the 19 suicide attempters had felt out of control as a result of excessive fear or rage during considerable periods of their tours of duty in Vietnam, including the situations in which their actions led to deaths about which they felt guilty. Among the 13 suicide attempters who had killed civilians, for example, 12, or 92.3%, had felt out of control when they did so. Only 17 (42.5%) of 40 nonsuicidal veterans who had killed civilians had done so while feeling out of control ($\chi^2=9.84$, $df=1$, $p=0.002$).

Although preservice variables were useful in understanding individual cases, none was found to be significantly related to postservice suicidal behavior. None of the veterans we studied had made a suicide attempt or showed evidence of preoccupation with suicide prior to his combat experience, nor was loss of control a significant factor in the precombat histories of either the group that became suicidal or the group that did not.

DISCUSSION

The most significant finding of our analysis was the clear and consistent relationship between veterans' combat-related guilt and postservice suicidal behavior. Combat-related guilt, usually related to having killed prisoners of war, was identified as an important factor in the stress disorders of American veterans studied several years after their combat experiences in World War II (27), although the linkage between guilt and suicide has not been previously described.

The nature of guerrilla combat in Vietnam, the uncertainty about who was the enemy, the emphasis on body counts, and the use of women, children, and the elderly as combatants undoubtedly contributed to combat actions about which veterans felt guilty. Our analysis showed, however, that the affective state in which the veteran had acted during combat was more significant in determining postservice guilt than was the action itself. A veteran who had killed civilians through firing under orders on a village labeled as unfriendly, and who in time came to question the judgment of his superiors and his own role in following

their orders, was not as likely to feel marked guilt or become suicidal about his behavior as a veteran whose killing of civilians had occurred while he was feeling out of control because of terror or rage.

Survivor guilt was also shown to be significantly related to postservice suicide attempts but not to suicidal preoccupation. Although survivor guilt has been described as an almost omnipresent symptom in the traumatic stress disorders of concentration camp survivors (28-30) and survivors of the atomic explosion at Hiroshima (31), among our Vietnam veterans we did not find survivor guilt to be as frequent as guilt about combat actions. Most probably this is because virtually all survivors of the concentration camps and Hiroshima lost someone close to them, whereas not all of our Vietnam veterans lost close friends in combat. Among the 72 who did, 52.8% (N=38) had marked survivor guilt, compared to only 28.6% (N=8) of the 28 veterans who did not lose close friends ($\chi^2=4.76$, $df=1$, $p=0.03$).

The logistic regression analysis did not identify survivor guilt as a significant predictor of suicide attempts, suggesting that its effect overlaps to a considerable degree with that of guilt concerning combat actions. Additional one-way analyses provided some evidence of the importance of the concurrent presence of the two types of guilt. Forty of the 100 veterans studied, for example, showed both marked guilt about combat actions and marked survivor guilt. Among this group 14, or 35.0%, had made a suicide attempt. In contrast, none of the 30 veterans who showed neither marked combat guilt nor survivor guilt had attempted suicide ($\chi^2=13.13$, $df=1$, $p<0.001$).

Moreover, among the 17 veterans who had killed civilians while feeling out of control and felt guilty about such actions but were not suicidal, only two had marked survivor guilt. By contrast, nine of the 12 suicide attempters who had killed civilians while feeling out of control experienced marked survivor guilt in addition to guilt concerning their combat actions ($\chi^2=12.21$, $df=1$, $p<0.001$). These findings suggest that the combination of these two types of guilt plays a role in determining suicide risk among veterans.

For most of the suicidal veterans, the clinical data obtained through the interviews elaborated the linkages between combat incidents about which a veteran felt guilty and the loss that led to survivor guilt. Sometimes the loss of a combat buddy came first and contributed to a state of rage which, in turn, led to a loss of control over combat behavior. In other cases, the loss of control as a result of extreme fear led to actions about which the individual felt guilty, which was re-enforced when a friend was killed. In either case, the veteran was apt to feel that a friend who did not deserve to die had died, while he himself, who did not deserve to live, was alive.

In most of the suicidal cases, the actions that had been committed were of a nature that made the postservice guilt and nightmares of punishment seem understandable and almost inevitable. A typical experi-

ence was that of a forward artillery spotter who, after seeing friends killed in combat, called for artillery fire on a village he knew to be friendly. Through his binoculars he saw an old woman with betel nut stains on her teeth who was blown up by a shell while she was running toward the fire as if trying to stop it. At the time, he was laughing, but subsequently he could not believe he had become so callous. In his most repetitive postservice nightmare, he is captured, tied to a pole, and spat on by the villagers, led by the old woman with the stained teeth.

In a few cases, the combat actions were not as unequivocal, and the particular meaning given to them by the veteran was integral to an understanding of his postservice suicidal behavior. One man, for example, shot and killed a woman who was advancing toward his patrol and did not heed his order to stop. She turned out to be wired with explosives, but the veteran ruminated about whether he could have stopped her by firing a warning shot or wounding her in the legs. Subsequently, his closest friend, who had extended his tour in Vietnam so that they could come home together, was killed. The veteran linked his guilt about both deaths with the guilt and rage he felt toward his mother, who had abandoned him as a child. In his recurrent dreams of the Vietnamese woman, her image would merge with that of his mother.

The suicidal veterans varied considerably in the degree to which they were in touch with their combat-related guilt and its relation to their self-destructive behavior. Frequently, dreams provided the first indication of their lingering guilt about combat actions. One veteran who had killed prisoners of war stated that everyone had done it and that he was not troubled by his behavior. However, he dreamed repetitively of being killed in the same way he had killed the prisoners. Another veteran, who had passively witnessed a rape and murder for which he felt no conscious guilt, dreamed recurrently that he was carrying the body of a dead girl and was unable to find a place to bury her.

The need for punishment based on combat guilt or survivor guilt was not the only motivation for suicide. For some veterans, the sense of having been transformed by combat experiences into a "murderer," in danger of again losing control of feelings of aggression and rage, was a significant motivating factor.

Our analysis established both anxiety and depression as significantly related to postcombat suicide attempts. The logistic regression analysis, however, did not confirm that anxiety is a significant predictor of suicidal behavior among veterans with PTSD and suggested that depression plays a role which is clearly secondary to that of guilt about combat actions. It is worth noting that we did not have a single case in which a veteran who experienced anxiety, depression, or both but did not show combat-related guilt had made a suicide attempt.

Many psychiatric disorders—such as depression, alcoholism, schizophrenia, and, most recently, panic disorder—have been shown to be associated with an

increased risk for suicide and/or attempted suicide (32–35). In the past two decades, research interest has increasingly focused on understanding why some patients in high-risk diagnostic categories are suicidal while most are not. Intense affective states, such as hopelessness in depression, grief related to loss in alcoholism, or fear of disintegration in schizophrenia, have been found to be significant in making this distinction (17, 36, 37). In the case of veterans with PTSD, our findings indicate that intense combat-related guilt is the most significant explanatory factor.

All the veterans we studied had had considerable combat experience in Vietnam, and all were diagnosed as having PTSD approximately 15 years later. Since almost 20% of our veterans with PTSD had made suicide attempts and another 15% showed sustained preoccupation with suicide (and neither group had a pre-combat history of suicidal preoccupation or behavior), PTSD emerges as a psychiatric disorder with considerable risk for suicide, at least among this group. The overwhelming presence of guilt related to combat among the veterans who were suicidal points to the need for clinical attention to such guilt in both the evaluation and the treatment of veterans with PTSD.

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